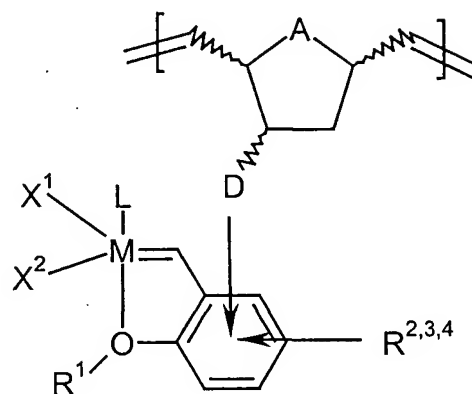


Claims:

1. Polymeric compounds containing at least
- 5 structural units of the formula (Ia),



where

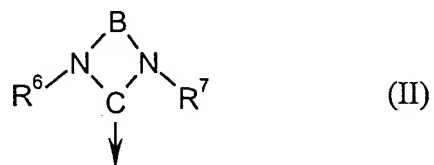
10

M is a transition metal of the 8th transition group of the Periodic Table,

15

X¹ and X² are the same or different and are each chlorine, bromine or iodine,

L is an N-heterocyclic carbene ligand of the formula (II)



20

where the direction of the arrow is intended to represent the bond to M

and where

5 B is a 1,2-ethanediyl or 1,2-ethenediyl radical which is optionally mono- or disubstituted by C₁-C₄-alkyl, C₆-C₁₅-arylalkyl or C₅-C₁₄-aryl and

10 R⁶ and R⁷ are each independently C₁-C₂₀-alkyl or C₅-C₂₄-aryl,

 R¹ is cyclic, straight-chain or branched C₁-C₂₀-alkyl or C₅-C₂₄-aryl and

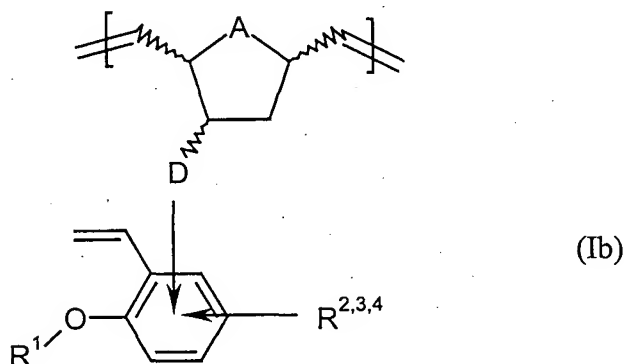
15 R², R³ and R⁴ are each independently hydrogen, C₁-C₂₀-alkyl, C₅-C₂₄-aryl, halogen, C₁-C₄-fluoroalkyl, C₁-C₄-alkoxy, C₅-C₁₄-aryloxy, (C₁-C₈-alkyl)OCO-, (C₁-C₈-alkyl)CO₂-, (C₅-C₁₄-aryl)OCO- or (C₅-C₁₄-aryl)CO₂- and/or

20 in each case two radicals in an ortho-arrangement to one another from the group of R², R³ and R⁴ are part of a cyclic system which contains a carbon framework having 5 to 22 carbon atoms, one or more carbon atoms of the cyclic system optionally being replaced by heteroatoms from the group of sulphur, oxygen or
25 nitrogen, and the cyclic system also being optionally mono- or polysubstituted by radicals selected from the group of halogen, C₁-C₄-fluoroalkyl, (C₁-C₄-alkyl)OCO-, (C₁-C₈-alkyl)CO₂-, (C₆-C₁₀-aryl)OCO- or (C₅-C₁₄-aryl)CO₂- and

A is oxygen, sulphur, sulfoxyl, sulphonyl or CR^8R^9 where R^8 and R^9 are each independently hydrogen or C_1 - C_4 -alkyl and

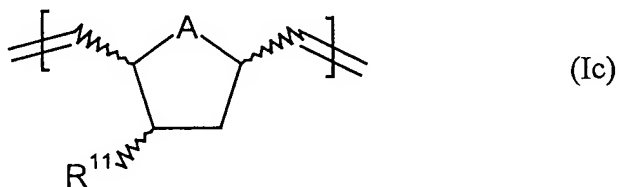
D is C_1 - C_8 -alkylene, $[(C_1$ - C_8 -alkylene)-O-] $_n$ where $n = 1$ to 12, $(C_1$ - C_8 -alkylene)CO $_2$ -, $(C_1$ - C_8 -alkylene)-OCO-(C_1 - C_8 -alkylene), $(C_1$ - C_8 -alkylene)CO $_2$ -(C_1 - C_8 -alkylene), $(C_1$ - C_8 -alkylene)CONR 10 -, $(C_1$ - C_8 -alkylene)NR 10 CO-, $(C_1$ - C_8 -alkylene)CONR 10 -(C_1 - C_8 -alkylene) or $(C_1$ - C_8 -alkylene)-NR 10 CO-(C_1 - C_8 -alkylene) where R^{10} is hydrogen or C_1 - C_4 -alkyl

and structural units of the formula (Ib)



where A, D, R^1 , R^2 , R^3 and R^4 each independently have the same definitions and fulfil the same conditions as specified under the formula (Ia).

2. Polymeric compounds according to Claim 1, characterized in that they also contain structural units of the formula (Ic)

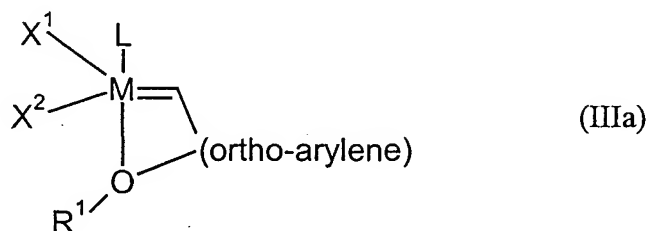


where

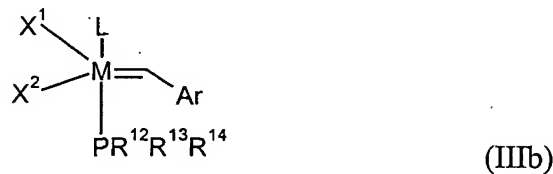
- 5 A has the same definition and fulfils the same conditions as specified under the formula (Ia) in Claim 1 and
- 10 R¹¹ is C₁-C₈-alkyl, [(C₁-C₈-alkylene)-O]_n-(C₁-C₈-alkyl) where n = 1 to 12, (C₁-C₈-alkylene)CO₂-(C₁-C₈-alkyl), (C₁-C₈-alkylene)-OCO-(C₁-C₈-alkyl), (C₁-C₈-alkylene)-OCO-(C₅-C₁₄-aryl), (C₁-C₈-alkylene)CO₂-(C₅-C₁₄-aryl), (C₁-C₈-alkylene)CONR¹⁰-(C₁-C₈-alkyl), (C₁-C₈-alkylene)NR¹⁰CO-(C₁-C₈-alkyl), (C₁-C₈-alkylene)CONR¹⁰-(C₅-C₁₄-aryl) or (C₁-C₈-alkylene)NR¹⁰CO-(C₅-C₁₄-aryl) where R¹⁰ is hydrogen or C₁-C₄-alkyl.
- 15
3. Polymeric compounds according to Claim 1, characterized in that they also contain structural units which are derived from olefins which are suitable for ring-opening metathesis polymerization.
- 20 4. Polymeric compounds according to Claim 1, characterized in that the degree of polymerization (numerical average) is 6 to 2000.
- 25 5. Polymeric compounds according to Claim 1, characterized in that A, D, M, L, X¹ X², R¹, R², R³, R⁴ and R¹¹ radicals present in the structural units of the formulae (Ia), (Ib) and, where present, (Ic) are each identical.

6. Polymeric compounds according Claim 1, characterized in that the average proportion by weight of structural units of the formula (Ia) and of the formula (Ib) and structural units of the formula (Ic) present is 80% or more.
7. Polymeric compounds according to Claim 1, characterized in that the ratio of structural units of the formula (Ia) to structural units of the formula (Ib) is 1:2 to 1:500.
8. Polymeric compounds according to Claim 2, characterized in that the ratio of structural units of the formula (Ia) to structural units of the formula (Ic) is 10:1 to 1:200.
9. Polymeric compounds according to Claim 1, characterized in that D in the structural units of the formulae (Ia) and (Ib) is bonded via the ortho-position to the olefin or the ylidene unit.
10. Polymeric compounds according to Claim 1, characterized in that M in formula (Ia) is ruthenium or osmium.
11. Polymeric compounds according to Claim 1, characterized in that B in formula (II) is 1,2-ethanediyl or 1,2-ethenediyl.
12. Polymeric compounds according to Claim 1, characterized in that R⁶ and R⁷ in formula (II) are identical and are each a primary C₅-C₂₀-alkyl radical, with the proviso that the carbon atom bonded to the nitrogen atom bears a tertiary alkyl radical, or are each a secondary C₃-C₂₀-alkyl radical, a tertiary C₄-C₂₀-alkyl radical or a phenyl radical which is further mono- or polysubstituted, although at least in an ortho-position, by C₁-C₄-alkyl radicals.

13. Process for preparing polymeric compounds, comprising reacting compounds of the formula (IIIa) and/or (IIIb)



5



where

- 10 R^1 , L, X^1 and X^2 each have the definition specified in Claim 1 under formula (Ia) and

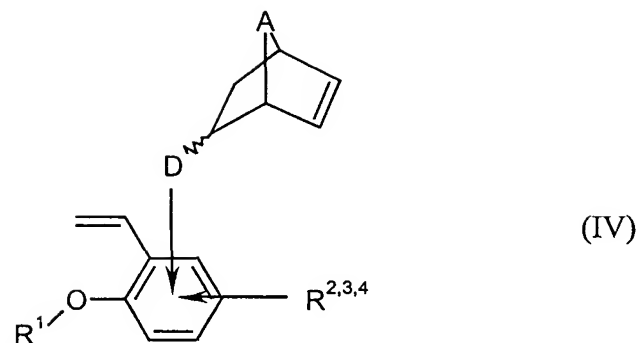
ortho-arylene is an ortho-phenylene or ortho-naphthylene radical, for example 1,2-naphthylene, and the radicals mentioned may also be substituted by one,
 15 two, three or four radicals per cycle which are selected from the group of C_1 - C_4 -alkyl, C_5 - C_{14} -aryl and C_1 - C_4 -alkoxy and

Ar is C_5 - C_{14} -aryl and

- 20 R^{12} , R^{13} and R^{14} are each independently C_1 - C_8 -alkyl or C_5 - C_{14} -aryl

with

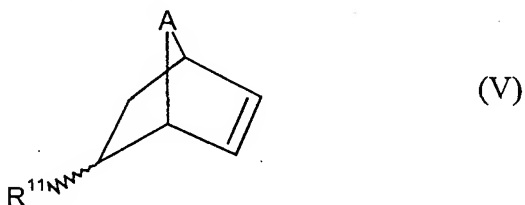
at least one compound of the formula (IV)



where

R^1 , R^2 , R^3 , R^4 , A and D have the definition specified under formula (Ia) in Claim 1.

14. Process according to Claim 13, characterized in that the reaction is also effected with at least one compound of the formula (V),

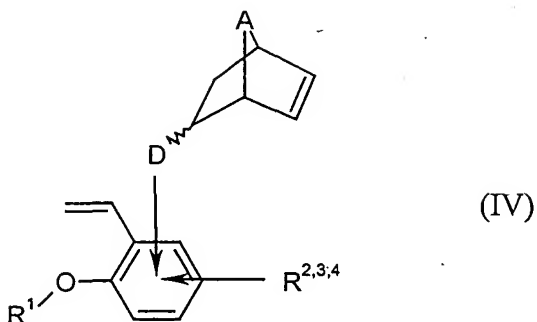


where

R^{11} and A each have the definition specified under formula (Ic).

15. Process according to Claim 13, characterized in that the reaction is also effected with one or more further olefins which can be polymerized by ring-opening metathesis.

16. Compounds of the formula (IV)



5 where

R^1 , R^2 , R^3 , R^4 , A and D are each as defined under formula (Ia) in Claim 1.

10 17. The compound of Claim 16 which is 7-Oxa-2-norborn-2-en-5-ylmethyl 2-isopropoxy-3-ethenylphenyl ether.

18. A process for preparing catalysts comprising incorporating polymeric compounds according to Claim 1.

15 19. Process for preparing olefins by catalytic olefin metathesis, comprising catalyzing said metathesis with polymeric compounds according to Claim 1.

20 20. Process according to Claim 19, characterized in that the catalysts are removed from the resulting catalytic reaction mixtures and reused for the preparation of olefins by catalytic olefin metathesis.